Trends in the reading proficiency of 9-, 13-, and 17-year-olds

A student's ability to read is essential to the educational process. If students fall behind in reading proficiency, they may find it difficult to benefit from other aspects of the curriculum. In the future, poor readers may also find it difficult to participate effectively in an economy requiring increasingly sophisticated job skills.

- Overall, reading proficiency for 9-year-olds improved between 1971 and 1980, declined slightly between 1980 and 1990, and remained stable between 1990 and 1994. Little change occurred from 1971 to 1994 at ages 13 and 17, although scores for 17-year-olds increased slightly between 1971 and 1988.
- Females continued to outscore males in reading proficiency at all age groups.
- Although black students have made no progress in reading since 1988, the average reading proficiency of black students was higher in 1994 than in 1971. Consequently, the gap between white students and their black counterparts decreased at ages 9 and 17 during this time period.
- There is evidence that reading proficiency increases more between ages 9 and 13 than between ages 13 and 17. For example, in 1994, there was an average proficiency difference of 47 scale points between 9- and 13-year-olds, and 30 scale points between 13- and 17-year-olds. This pattern holds for both genders and all racial/ethnic groups.

Average reading proficiency (scale score), by sex and age: Selected years 1971–94

	Total			Male			Female		
Year	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17
1971	[1]208	255	285	[1]201	250	279	214	[1]261	291
1975	210	256	286	204	250	280	216	262	[1]291
1980	[2]215	258	286	[2]210	[2]254	282	[1,2]220	263	[1]289
1984	[2]211	257	289	[2]208	[2]253	[2]284	214	262	294
1988	[2]212	258	[2]290	[2]208	252	[2]286	216	263	294
1990	209	257	[2]290	204	250	284	214	263	[2]296
1992	210	[2]260	[2]290	[2]206	254	[2]284	215	[2]265	296
1994	[2]211	258	288	[2]207	251	282	215	[2]266	295

Average reading proficiency (scale score), by race/ethnicity and age: Selected years 1971–94

	White			Black			Hispanic		
Year	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17
1971	[1]214	[1]261	291	[1]170	[1]222	[1]239	—	—	—
1975	217	262	293	[2]181	[1]226	[1]241	183	[3]233	252
1980	[1,2]221	[2]264	293	[2,3]189	[2]233	[1]243	190	237	261
1984	[2]218	263	[2]295	[2]186	[2]236	[2]264	187	240	[2]268
1988	218	261	295	[2]189	[2]243	[2]274	[2]194	240	[2]271
1990	217	262	[2]297	[2]182	[2]242	[2]267	189	238	[2]275
1992	[2]218	[2]266	[2]297	[2]184	[2]238	[2]261	192	239	[2]271
1994	[2]218	[2]265	296	[2]185	[2]234	[2]266	186	235	263

— Not available.

[1] Statistically significant difference from 1994.

[2] Statistically significant difference from 1971 for all racial/ethnic groups except Hispanics. Statistically significant difference from 1975 for Hispanics.

[3] Data revised from previously published figures.

NOTE: The reading proficiency scale ranges from 0 to 500. (See supplemental table 15-1 for further explanations of levels.)

Level 150: Simple, discrete reading tasks

Level 200: Partial skills and understanding

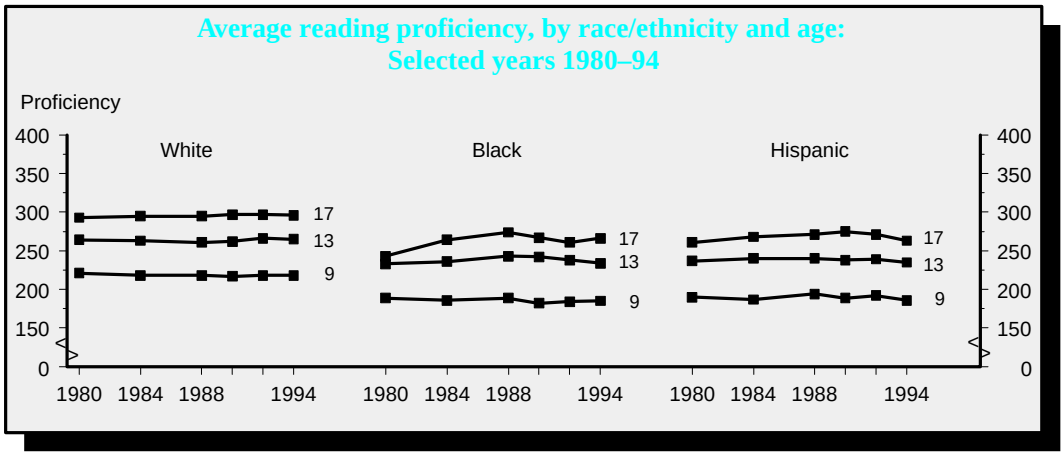
Level 250: Interrelates ideas and makes generalizations

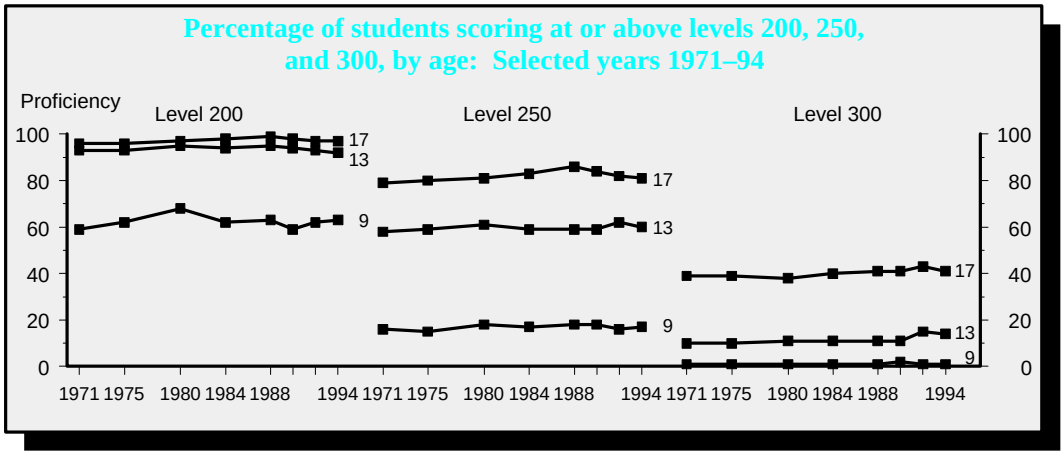
Level 300: Understands complicated information

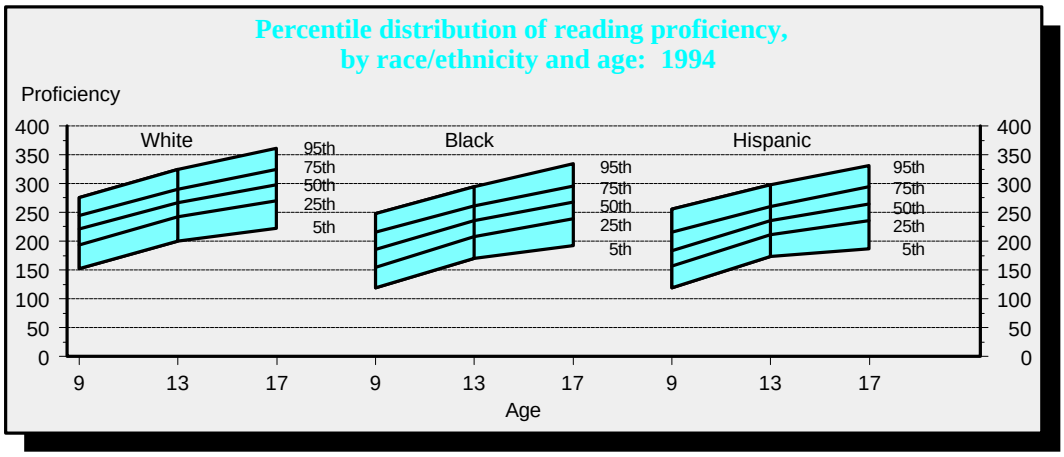
Level 350: Learns from specialized reading materials

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Average reading proficiency (scale score)







NOTE: The reading proficiency scale ranges from 0 to 500. (See supplemental table 15-1 for further explanations of levels.)

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994*, 1996.

Note on NAEP cohorts

Long-term trend

Three of the NAEP assessments, reading, mathematics, and science, report trends in the progress of students by age. Proficiencies are reported for those students aged 9, 13, and 17. The modal grades for students at these ages are 4^{th}, 8^{th}, and 11^{th} grade. The fourth assessment, writing, is given to students in grades 4, 8, and 11, regardless of their age. In all four subjects, it would appear that the time span between the youngest and middle age/grade is greater than between the middle and oldest group. However, the way age is defined (on a calendar or fiscal year basis) and the time at which each age/grade is assessed (fall, winter, or spring) results in the same length of time (or years of schooling) between the three age/grade groups. A discussion of this methodology follows.

Age is determined on a calendar year basis for 9- and 13-year-olds, but on a fiscal year basis for 17-year-olds. In other words, the reading, mathematics, and science scores in 1994 represent students born in 1984 (9-year-olds), students born in 1980 (13-year-olds), and students born between October 1, 1976 and September 30, 1977 (17-year-olds). The writing scores represent students in grades 4, 8, or 11 at the time of the assessment regardless of age.

In addition to different age definitions, the time of the school year when the assessment is administered varies across age levels: 9-year-olds/4^{th}-graders are tested in the winter; 13-year-olds/8^{th}-graders are tested in the fall; and 17-year-olds/11^{th}-graders are tested in the spring for all the assessments. Since 9-year-olds are tested between January and February of the year in which they turn 10, and 13-year-olds are tested between October and December of the year in which they turn 13, the 13-year-olds have had almost $3^{3/4}$ more years of schooling than the 9-year-olds. Likewise, since 17-year-olds are tested between March and May, they are between $16^{1/2}$ and $17^{1/2}$ at the time of the assessment (the difference is due to age being determined on a fiscal year basis); thus, they have had about $3^{3/4}$ more years of exposure to school than 13-year-olds.

These different means of determining a student's age and the various testing times have been adopted in order to measure a uniform period of growth among the three age/grade groups. Comparing age/grade cohorts over time can be more problematic, however. Nine-year-olds in 1990 generally represent the same age cohort as 13-year-olds in 1994—two points in time not quite 4 years apart. However, the 17-year-olds tested in 1994 were generally younger than the 1990 13-year-old age cohort was in 1994. Therefore, care must be taken when examining student cohorts across assessments in different years.

Short-term trend

Although *Indicator 18* (Trends in the mathematics proficiency of 9-, 13-, and 17-year-olds) focused primarily on the trend data described above, supplemental data from the *NAEP 1996 Mathematics Report Card* were also included. These more recent data allow for trend comparisons just over the short term, as only the scores from the 1990, 1992, and 1996 surveys are comparable. These data were based on a separate survey instrument than those from the long-term trend data and were given to different students. The short-term trend assessment was designed using a framework influenced by the National Council for Teachers of Mathematics (NCTM) Curriculum and Evaluation Standards for School Mathematics. The long-term trend assessment has remained unchanged since its original design in 1973 and can be used to make comparisons in the performance of students over the past 21 years. One important difference of the short-term trend data is that 4^{th}-, 8^{th}-, and 12^{th}-graders were assessed rather than 9-, 13-, and 17-year-olds, thus allowing for comparisons across cohorts.

Table 15-1 Explanations of levels of reading proficiency

Level 350: Learns from specialized reading materials

Readers at this level can extend and restructure the ideas presented in specialized and complex texts. Examples include scientific materials, literary essays, and historical documents. Readers also able to understand the links between ideas even when those links are not explicitly stated, and to make appropriate generalizations. Performance at this level suggests the ability to synthesize and learn from specialized reading materials.

Level 300: Understands complicated information

Readers at this level can understand complicated literary and informational passages, including material about topics they study at school. They can also analyze and integrate less familiar material and provide reactions to and explanations of the text as a whole. Performance at this level suggests the ability to find, understand, summarize, and explain relatively complicated information.

Level 250: Interrelates ideas and makes generalizations

Readers at this level use intermediate skills and strategies to search for, locate, and organize the information they find in relatively lengthy passages and can recognize paraphrases of what they have read. They can also make inferences and reach generalizations about main ideas and author's purpose from passages dealing with literature, science, and social studies. Performance at this level suggests the ability to understand specific or sequentially related information.

Level 200: Partial skills and understanding

Readers at this level can locate and identify facts from simple informational paragraphs, stories, and news articles. In addition, they can combine ideas and make inferences based on short, uncomplicated passages. Performance at this level suggests the ability to understand specific or sequentially related information.

Level 150: Simple, discrete reading tasks

Readers at this level can follow brief written directions. They can also select words, phrases, or sentences to describe a simple picture and can interpret simple written clues to identify a common object. Performance at this level suggests the simple, discrete reading tasks.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table 15-2 Percentage of students aged 9, 13, or 17 scoring at or above five levels of reading proficiency: 1971, 1975, 1980, 1984, 1988, 1990, 1992, and 1994

Proficiency level	Age	Year							
		1971	1975	1980	1984	1988	1990	1992	1994
Level 350:	9	0	0	0	0	0	0	0	0
Learns from specialized	13	[1]0	0	0	0	0	0	1	[2]1
reading materials	17	7	6	[2]5	6	[1,2]5	7	7	7
Level 300:	9	1	1	1	1	1	[1]2	1	1
Understands complicated	13	[1]10	[1]10	[1]11	[1]11	[1]11	[1]11	[2]15	[2]14
information	17	39	39	38	40	41	41	[2]43	41
Level 250:	9	16	15	18	17	18	18	16	17
Interrelates ideas and	13	58	59	61	59	59	59	62	60
makes generalizations	17	79	80	81	[2]83	[1,2]86	[2]84	[2]82	81
Level 200:	9	59	[2]62	[2]68	62	63	59	62	63
Partial skills and	13	93	93	[2]95	[1]94	[1]95	94	93	92
understanding	17	96	96	[2]97	[1,2]98	[1,2]99	[2]98	97	97
Level 150:	9	91	[2]93	[1,2]95	[2]92	93	90	92	92
Simple, discrete	13	[1]100	100	[1]100	100	100	100	100	[2]99
reading tasks	17	100	100	[2]100	[2]100	[2]100	100	100	100

[1] Statistically significant difference from 1994.

[2] Statistically significant difference from 1971.

NOTE: See table 15-1 for further explanations of the proficiency levels.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table 15-3 Percentile distribution of reading proficiency scores, by age and race/ethnicity: 1980, 1984, 1988, 1990, 1992, and 1994

	Age 9						Age 13						Age 17					
Percentile	1980	1984	1988	1990	1992	1994	1980	1984	1988	1990	1992	1994	1980	1984	1988	1990	1992*	1994
All students																		
5	149	141	142	135	141	140	199	197	200	196	191	188	209	220	226	220	214	211
10	165	159	157	150	156	156	213	210	213	210	208	205	228	236	242	237	233	230
25	191	184	184	179	183	184	235	234	234	233	235	233	258	263	266	264	263	260
50	217	213	214	210	214	215	260	258	258	257	262	260	288	290	291	291	293	290
75	241	240	240	240	239	240	283	282	281	282	287	285	316	317	316	319	319	319
90	262	263	263	266	260	260	302	302	302	302	309	307	340	340	337	343	343	343
95	273	277	278	280	272	272	314	314	314	314	322	320	354	353	349	356	356	358
White																		
5	161	152	150	144	153	152	209	205	204	204	204	200	226	230	233	229	228	222
10	175	167	165	160	167	168	222	218	217	217	219	217	242	246	247	246	245	241
25	199	192	192	188	193	194	243	241	238	240	243	242	267	271	271	271	272	270
50	223	220	219	218	221	221	265	263	262	263	268	267	294	297	295	298	300	298
75	246	245	244	247	244	244	287	286	285	286	292	290	320	322	320	324	325	324
90	265	267	267	271	264	263	306	305	304	306	312	311	343	343	340	347	347	347
95	276	280	281	285	276	275	317	317	316	318	324	324	357	356	352	360	359	361
Black																		
5	123	121	125	115	119	119	179	180	191	182	170	170	176	202	214	201	188	192
10	139	135	138	129	132	133	191	192	202	194	185	183	191	216	228	217	206	210
25	165	159	162	153	156	155	211	213	222	217	210	208	217	239	251	242	235	239
50	192	187	188	182	185	186	233	236	242	243	239	236	244	264	274	268	263	268
75	216	213	217	211	214	216	255	259	264	266	266	261	270	288	300	294	288	296
90	236	235	238	236	236	237	275	280	284	286	287	283	293	311	321	316	312	318
95	247	248	252	251	249	248	286	293	299	299	303	295	307	324	333	331	328	335
Hispanic																		
5	123	120	122	125	125	119	183	181	181	178	165	174	184	202	204	206	193	187
10	138	135	140	139	139	134	195	193	195	191	184	187	197	217	218	224	213	203
25	164	161	165	161	163	157	215	216	219	214	213	211	225	242	246	250	241	236
50	192	189	196	189	193	184	238	240	240	239	242	236	253	269	274	276	275	264
75	218	215	222	219	222	216	259	264	262	262	267	260	279	295	298	303	303	294
90	238	236	247	239	245	243	279	284	284	284	289	282	307	318	316	327	326	318
95	250	247	259	253	255	255	291	296	297	296	303	298	321	332	328	339	337	331

* Scores have been revised from previously published figures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table 15-4 Average reading proficiency, by age and parents' highest education level: 1971, 1975, 1980, 1984, 1988, 1990, 1992, and 1994

Parents' highest education level	Year	Age 9		Age 13		Age 17	
		Percentage of students	Average proficiency	Percentage of students	Average proficiency	Percentage of students	Average proficiency
Less than a high school graduate	1971	[1]10	189	[1]16	238	[1]20	261
	1975	[1]10	190	[1,2]14	239	[1,2]16	262
	1980	[1,2]6	194	[1,2]10	238	[1,2]13	262
	1984	[1,2]6	[2]195	[2]9	240	[1,2]12	[2]269
	1988	[2]5	192	[2]8	[1,2]246	[2]9	267
	1990	[2]5	193	[2]8	241	[2]9	270
	1992	[2]5	195	[2]6	239	[2]8	271
	1994	[2]4	189	[2]7	237	[2]7	268
Graduated from high school	1971	[1]22	208	[1]32	[1]256	[1]31	[1]283
	1975	[1]24	211	[1]33	255	[1]34	281
	1980	[1,2,3]25	[2]213	31	254	[1]32	[2]278
	1984	[1,2,3]20	209	[1,2,3]36	253	[1,2]35	281
	1988	[2]16	211	31	253	30	282
	1990	[2]17	209	31	[1]251	30	[1]283
	1992	[2]16	207	28	252	28	280
	1994	[2]16	207	[2]21	[2]251	[2]27	[2]276
Some education after high school	1971	[1]33	224	[1]38	270	[1]42	302
	1975	[1]34	222	[1]40	270	[1,2]46	301
	1980	[1,2]40	[1]226	[1,2]49	271	[1,2]51	299
	1984	[1,2,3]37	223	[1,2,3]46	268	[1,2]50	301
	1988	[2]45	220	[2]52	[2]265	[2]58	300
	1990	[2]42	[2]218	[1,2]50	267	[2]58	300
	1992	[2]45	220	[2]57	270	[2,3]61	299
	1994	[2]46	221	[2]57	269	[2]62	299

[2] Statistically significant difference from 1994.

[1] Statistically significant difference from 1971.

[3] Revised from previously published figures.

NOTE: "Percentage of students" represents the percentage of all students from each subgroup. Not shown are about one-third of students at age 9 and smaller percentages at ages 13 and 17 who did not know their parents' highest education level.

SOURCE: U. S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table 15-5 Average reading proficiency scores, by age and grade: 1971, 1975, 1980, 1984, 1988, 1990, 1992, and 1994

	Below modal grade[1]		At modal grade[1]		Above modal grade[1]	
Year	Percentage	Proficiency	Percentage	Proficiency	Percentage	Proficiency
1971	‹24	‹178	‹75	‹217	‹1	‹232
1975	‹23	‹,›183	‹75	218	›1	‹226
1980	‹28	›189	‹71	›225	›,“0	243
1984	‹,›34	‹,›187	‹,›65	›223	›,“0	›254
1988	‹,›37	›193	‹,›63	›223	1	262
1990	›42	›189	‹,›58	›224	›,“0	242
1992	›43	›192	‹,›57	›224	›,“0	243
1994	›40	›194	›60	›222	›,“0	›268
			Age 13			
1971	‹28	‹230	‹71	‹265	‹1	‹278
1975	‹28	‹232	‹72	‹265	‹1	‹278
1980	‹28	›240	‹70	266	‹,›1	‹274
1984	‹,›37	›239	‹,›62	267	‹,›1	‹294
1988	‹,›39	›243	‹,›60	267	1	‹272
1990	‹,›39	›243	‹,›60	266	1	‹290
1992	›43	›243	›56	›272	1	‹,›312
1994	›44	›244	›56	›269	›,“0	—
			Age 17			
1971	‹14	‹238	‹73	‹291	‹13	302
1975	‹15	‹242	‹73	‹292	‹12	302
1980	‹14	‹244	‹,›77	‹291	›9	300
1984	‹,›22	›259	‹,›68	›296	›10	304
1988	‹,›24	›265	‹,›65	›296	‹12	305
1990	‹,›26	›261	‹,›65	›299	›9	310
1992	›28	›261	›64	›301	›8	300
1994	›29	›261	›63	›299	›7	305

— Too few sample observations for a reliable estimate.

[1] The modal grade is the most common grade level for students of a particular age. For example, the modal grade at age 9 is fourth grade. Nine-year-olds in fifth grade are above the modal grade, and 9-year-olds in third grade are below the modal grade for their age.

‹ Statistically significant difference from 1994.

› Statistically significant difference from 1971.

“ Percentages less than 0.5 are rounded to 0.

NOTE: The modal grades are grade 4 at age 9, grade 8 at age 13, and grade 11 at age 17. The modal grade is lower for 17-year-olds because of differences in age definition and in the time of year the test is given, causing more students to be above the modal grade at age 17 than at any other age. For a more complete explanation see the supplemental note to this indicator.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table 15-6 Average reading proficiency, by age and number of reading materials in the home: 1971 and 1994

Number of types of material in the home	Year	Age 9 Percentage of students	Age 9 Average proficiency	Age 13 Percentage of students	Age 13 Average proficiency	Age 17 Percentage of students	Age 17 Average proficiency
	1971	*28	*186	*17	*227	*11	*246
0–2	1994	38	197	22	238	18	263
	1971	32	*208	*25	*249	*22	*274
3	1994	32	215	32	258	29	287
	1971	*39	223	*58	266	*67	296
4	1994	30	225	46	269	53	298

* Statistically significant difference from 1994.

NOTE: Students were asked whether they had access to each of four types of reading material: newspapers, magazines, books, and encyclopedias.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table S15-1 Standard errors for table 15-2

Proficiency level	Age	Year							
		1971	1975	1980	1984	1988	1990	1992	1994
Level 350:	9	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Learn from specialized	13	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.1
reading materials	17	0.4	0.3	0.4	0.3	0.6	0.5	0.6	0.7
Level 300:	9	0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.3
Understand complicated	13	0.5	0.5	0.5	0.4	0.8	0.6	0.9	0.8
information	17	1.0	0.8	1.1	0.8	1.5	1.0	1.1	1.2
Level 250:	9	0.6	0.6	0.8	0.6	1.1	1.0	0.8	1.2
Interrelate ideas and	13	1.1	1.0	1.1	0.6	1.3	1.0	1.4	1.2
make generalizations	17	0.9	0.7	0.9	0.5	0.8	1.0	0.8	1.0
Level 200:	9	1.0	0.8	1.0	0.7	1.3	1.3	1.1	1.4
Partial skills and	13	0.5	0.4	0.4	0.3	0.6	0.6	0.7	0.6
understanding	17	0.3	0.3	0.3	0.1	0.3	0.3	0.4	0.5
Level 150:	9	0.5	0.4	0.4	0.3	0.7	0.9	0.4	0.7
Simple, discrete	13	0.0	0.1	0.1	0.0	0.1	0.1	0.3	0.2
reading tasks	17	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table S15-2 Standard errors for table 15-3

Percentile	Age 9						Age 13						Age 17					
	1980	1984	1988	1990	1992	1994	1980	1984	1988	1990	1992	1994	1980	1984	1988	1990	1992	1994
All students																		
5	1.6	1.2	3.6	3.2	1.6	2.6	1.9	1.1	1.7	1.9	2.8	4.9	3.0	1.3	1.3	2.3	2.9	3.6
10	1.4	1.2	2.1	1.9	1.5	2.5	1.5	0.9	1.2	1.8	1.9	1.7	1.7	0.9	2.2	3.1	2.7	3.1
25	1.2	1.2	1.8	1.8	1.5	1.9	1.1	0.8	1.2	1.0	1.8	1.2	1.1	1.1	1.8	1.3	1.1	1.8
50	0.9	1.0	1.4	1.5	0.9	1.1	0.8	0.8	1.1	0.9	1.6	1.1	0.7	0.9	1.9	1.3	1.2	1.8
75	1.0	0.9	1.3	1.8	1.2	1.5	0.8	0.6	1.4	0.8	1.4	1.1	0.7	0.9	1.4	1.5	1.4	1.8
90	1.1	0.9	1.7	1.8	1.2	1.6	0.8	0.8	1.0	1.0	1.8	1.4	0.9	0.7	2.1	2.1	1.8	1.8
95	1.6	1.4	2.0	1.3	1.2	1.5	0.8	1.0	1.3	1.3	2.6	1.4	0.7	1.0	1.8	1.7	1.9	1.7
White																		
5	1.5	1.3	3.4	3.2	1.6	2.0	1.2	0.9	1.4	2.2	2.7	2.4	1.2	1.4	1.1	2.5	3.2	3.9
10	1.0	1.0	3.9	1.5	1.8	2.6	1.2	0.8	2.1	1.7	2.2	3.0	0.9	0.9	3.7	2.5	2.8	3.8
25	0.9	1.0	2.4	2.8	1.3	1.8	0.8	0.8	1.0	1.7	1.4	1.0	0.9	1.1	1.7	1.4	1.9	3.0
50	0.8	1.0	1.2	2.1	1.3	1.4	0.6	0.7	1.1	1.4	2.0	1.2	0.8	1.1	1.6	1.2	1.9	1.5
75	0.9	0.9	1.8	2.3	1.2	1.5	0.7	0.7	0.9	1.2	1.1	1.4	0.7	0.8	1.9	1.9	1.2	1.5
90	1.1	1.3	2.2	2.1	1.0	1.5	0.8	0.8	1.5	2.4	1.9	1.2	0.7	0.8	1.6	1.6	2.5	2.5
95	1.2	1.3	2.6	2.5	3.1	1.8	0.8	1.3	1.1	2.7	2.0	1.3	1.2	0.9	3.0	1.7	2.5	2.7
Black																		
5	4.1	2.2	6.3	4.7	6.1	3.7	2.4	2.0	3.4	5.3	10.1	3.7	2.4	4.1	9.6	7.9	3.3	8.7
10	4.0	2.8	3.4	3.9	3.6	4.7	3.3	1.9	3.3	7.3	3.3	6.6	3.6	2.0	4.3	4.0	6.7	7.7
25	1.9	1.8	3.0	3.2	4.4	4.1	1.8	2.6	2.4	3.2	3.0	2.3	2.7	1.4	2.5	3.9	4.1	4.8
50	2.1	1.5	4.0	3.1	2.5	4.7	1.3	1.3	2.7	4.0	2.3	3.0	2.6	1.2	3.6	1.9	1.6	2.9
75	1.9	1.6	2.9	2.4	2.6	5.1	1.9	1.1	4.5	2.5	2.8	4.7	2.0	1.6	3.1	2.7	1.9	5.6
90	1.9	2.5	3.8	2.7	2.9	2.6	1.7	1.9	4.7	4.9	3.1	2.8	1.7	1.9	4.0	4.8	4.2	7.0
95	1.8	2.0	4.6	6.9	2.5	4.7	1.5	1.6	2.2	3.0	4.9	5.4	2.4	3.4	4.9	11.0	5.4	4.0
Hispanic																		
5	3.1	5.1	11.3	8.9	6.2	5.5	4.8	2.9	6.9	9.6	13.0	5.7	3.7	2.4	11.7	11.1	7.2	18.5
10	4.1	7.2	7.7	4.3	5.6	13.5	4.5	3.3	3.8	4.9	8.0	6.4	4.9	2.9	7.4	12.0	9.7	7.9
25	3.9	2.4	5.1	1.9	6.0	4.4	3.0	2.5	6.1	4.1	5.7	4.9	5.9	2.6	5.9	8.3	8.7	6.4
50	3.3	2.3	3.4	3.5	4.6	6.9	2.4	2.5	4.1	4.1	10.6	4.2	3.7	3.1	5.1	3.2	4.7	6.0
75	3.0	2.3	6.0	4.0	2.3	5.3	1.9	2.3	5.4	3.1	7.7	3.7	3.0	3.9	7.1	4.9	6.5	8.2
90	2.7	2.2	8.0	5.7	5.6	2.8	2.9	2.2	8.7	6.0	8.0	8.4	6.1	6.1	18.1	3.2	4.2	5.9
95	4.3	2.1	11.4	6.7	10.4	6.9	1.5	3.1	10.1	4.5	7.7	15.6	6.8	7.7	8.6	11.2	4.6	5.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table S15-3 Standard errors for table 15-4

Parents' highest education level	Year	Age 9		Age 13		Age 17	
		Percentage of students	Average proficiency	Percentage of students	Average proficiency	Percentage of students	Average proficiency
Less than a high school graduate	1971	0.4	1.5	0.6	1.3	0.8	1.5
	1975	0.4	1.3	0.6	1.2	0.6	1.3
	1980	0.5	1.6	0.6	1.1	0.7	1.5
	1984	0.2	1.4	0.4	0.9	0.6	1.1
	1988	0.6	4.9	0.6	2.1	0.8	2.0
	1990	0.5	3.2	0.6	1.8	0.6	2.8
	1992	0.4	4.5	0.5	2.6	0.8	3.9
	1994	0.4	4.0	0.6	2.4	0.5	2.7
Graduated from high school	1971	0.5	1.2	0.7	0.8	0.8	1.2
	1975	0.4	0.9	0.6	0.7	0.5	1.1
	1980	0.8	1.3	0.7	0.9	0.9	1.0
	1984	0.6	1.0	1.0	0.7	1.1	0.7
	1988	0.6	2.2	1.0	1.2	1.2	1.3
	1990	0.8	1.8	1.2	0.9	1.0	1.4
	1992	0.8	1.5	1.2	1.7	0.9	1.6
	1994	0.8	2.6	1.2	1.4	1.1	1.9
Some education after high school	1971	0.9	1.1	1.1	0.8	1.3	1.0
	1975	0.7	0.9	0.9	0.8	0.8	0.7
	1980	1.5	1.1	1.3	0.8	1.3	1.0
	1984	1.0	0.9	1.1	0.7	1.2	0.7
	1988	1.4	1.7	1.5	1.4	1.6	1.3
	1990	1.3	2.0	1.5	1.0	1.3	1.1
	1992	0.9	1.4	1.6	1.4	1.4	1.4
	1994	1.2	1.3	1.5	1.2	1.4	1.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1960 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table S15-4 Standard errors for table 15-5

Year	Below modal grade		At modal grade		Above modal grade	
	Percentage	Proficiency	Percentage	Proficiency	Percentage	Proficiency
			Age 9			
1971	0.8	1.2	0.8	1.1	0.1	4.1
1975	0.8	1.1	0.9	0.7	0.1	4.3
1980	1.5	1.3	1.4	0.8	0.1	6.1
1984	0.3	0.9	0.2	0.8	0.1	4.7
1988	0.3	1.8	0.3	1.5	0.2	11.0
1990	0.5	1.8	0.5	1.5	0.1	20.1
1992	0.5	1.4	0.5	1.0	0.1	16.7
1994	0.5	1.6	0.5	1.3	0.1	14.3
			Age 13			
1971	0.9	1.0	0.9	0.8	0.2	2.4
1975	0.9	0.9	0.9	0.7	0.1	4.2
1980	1.2	1.5	1.3	0.8	0.1	4.9
1984	0.2	0.7	0.2	0.5	0.2	7.5
1988	0.5	1.4	0.3	1.1	0.5	10.8
1990	0.4	1.1	0.2	0.9	0.3	16.0
1992	0.7	1.9	0.5	1.1	0.6	3.9
1994	0.5	1.6	0.5	0.8	*0.0	—
			Age 17			
1971	0.6	1.5	0.7	1.0	0.7	1.6
1975	0.7	1.8	0.7	0.7	0.4	1.0
1980	0.7	2.1	0.6	1.0	0.6	1.7
1984	0.7	0.9	0.2	0.6	0.7	1.2
1988	1.2	1.9	0.2	1.1	1.3	3.0
1990	0.6	1.9	0.2	1.0	0.6	2.3
1992	0.6	1.5	0.2	1.3	0.6	3.2
1994	0.8	2.4	0.3	1.2	0.8	5.3

— Not available.

* Standard error less than 0.05 is rounded to 0.0.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table S15-5 Standard errors for table 15-6

Number of types of material in the home	Year	Age 9 Percentage of students	Age 9 Average proficiency	Age 13 Percentage of students	Age 13 Average proficiency	Age 17 Percentage of students	Age 17 Average proficiency
	1971	0.8	1.0	0.6	1.3	0.6	1.8
0–2	1994	1.1	1.5	0.9	1.8	0.9	2.0
	1971	0.4	1.0	0.5	0.9	0.5	1.4
3	1994	0.8	1.5	0.9	1.7	0.8	1.8
	1971	0.9	0.9	1.0	0.7	0.9	1.0
4	1994	1.2	1.4	1.3	0.9	1.0	1.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Table S15(a) Standard errors for the first text table in *Indicator 15*

	Total			Male			Female		
Year	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17
1971	1.0	0.9	1.2	1.1	1.0	1.2	1.0	0.9	1.3
1975	0.7	0.8	0.8	0.8	0.8	1.0	0.8	0.9	1.0
1980	1.0	0.9	1.2	1.1	1.1	1.3	1.1	0.9	1.2
1984	0.7	0.5	0.6	0.8	0.6	0.6	0.8	0.6	0.8
1988	1.1	1.0	1.0	1.4	1.3	1.5	1.3	1.0	1.5
1990	1.2	0.8	1.1	1.7	1.1	1.6	1.2	1.1	1.2
1992	0.9	1.2	1.1	1.3	1.7	1.6	0.9	1.2	1.1
1994	1.2	0.9	1.3	1.3	1.2	2.2	1.4	1.2	1.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994* , 1996.

Table S15(b) Standard errors for the second text table in *Indicator 15*

	White			Black			Hispanic		
Year	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17
1971	0.9	0.7	1.0	1.7	1.2	1.7	—	—	—
1975	0.7	0.7	0.6	1.2	1.2	2.0	2.2	3.0	3.6
1980	0.8	0.7	0.9	1.8	1.5	1.8	2.3	2.0	2.7
1984	0.8	0.6	0.7	1.1	1.0	1.0	2.1	1.7	2.2
1988	1.4	1.1	1.2	2.4	2.4	2.4	3.5	3.5	4.3
1990	1.3	0.9	1.2	2.9	2.2	2.3	2.3	2.3	3.6
1992	1.0	1.2	1.4	2.2	2.3	2.1	3.1	3.5	3.7
1994	1.3	1.1	1.5	2.3	2.4	3.9	3.9	1.9	4.9

— Not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994* , 1996.

Average reading proficiency (scale scores), by sex and age: Selected years 1971–94

	Total			Male			Female		
Year	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17
1971	[1]208	255	285	[1]201	250	279	214	[1]261	291
1975	210	256	286	204	250	280	216	262	[2]291
1980	[2]215	258	286	[2]210	[2]254	282	[1,2]220	263	[2]289
1984	[2]211	257	289	[2]208	[2]253	[2]284	214	262	294
1988	[2]212	258	[2]290	[2]208	252	[2]286	216	263	294
1990	209	257	[2]290	204	250	284	214	263	[2]296
1992	210	[2]260	[2]290	[2]206	254	[2]284	215	[2]265	296
1994	[2]211	258	288	[2]207	251	282	215	[2]266	295

[1] Statistically significant difference from 1994.

[2] Statistically significant difference from 1971 for all racial/ethnic groups except Hispanics. Statistically significant difference from 1975 for Hispanics.

NOTE: Reading proficiency scale has a range from 0 to 500. (See supplemental table 15-1 for explanations of levels.)

Level 150: Simple, discrete reading levels

Level 200: Partial skills and understanding

Level 250: Interrelate ideas make generalizations

Level 300: Understand complicated information

Level 350: Learn from specialized reading materials

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.

Average reading proficiency (scale scores), by race/ethnicity and age: Selected years 1971–94

Year	White			Black			Hispanic		
	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17	Age 9	Age 13	Age 17
1971	[1]214	[1]261	291	[1]170	[1]222	[1]239	—	—	—
1975	217	262	293	[1]181	[1]226	[1]241	183	[1]233	252
1980	[1,2]221	[1]264	293	[1,2]189	[1]233	[1]243	190	237	261
1984	[1]218	263	[1]295	[1]186	[1]236	[1]264	187	240	[1]268
1988	218	261	295	[1]189	[1]243	[1]274	[1]194	240	[1]271
1990	217	262	[1]297	[1]182	[1]242	[1]267	189	238	[1]275
1992	[1]218	[1]266	[1]297	[1]184	[1]238	[1]261	192	239	[1]271
1994	[1]218	[1]265	296	[1]185	[1]234	[1]266	186	235	263

— Not available.

[1] Statistically significant difference from 1994.

[2] Statistically significant difference from 1971 for all racial/ethnic groups except Hispanics. Statistically significant difference from 1975 for Hispanics.

[3] Data revised from previously published figures.

NOTE: Reading proficiency scale has a range from 0 to 500. (See supplemental table 15-1 for explanations of levels.)

Level 150: Simple, discrete reading levels

Level 200: Partial skills and understanding

Level 250: Interrelate ideas make generalizations

Level 300: Understand complicated information

Level 350: Learn from specialized reading materials

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, *Trends in Academic Progress: Achievement of U.S. Students in Science, 1969 to 1994; Mathematics, 1973 to 1994; Reading, 1971 to 1994; Writing, 1984 to 1994,* 1996.